

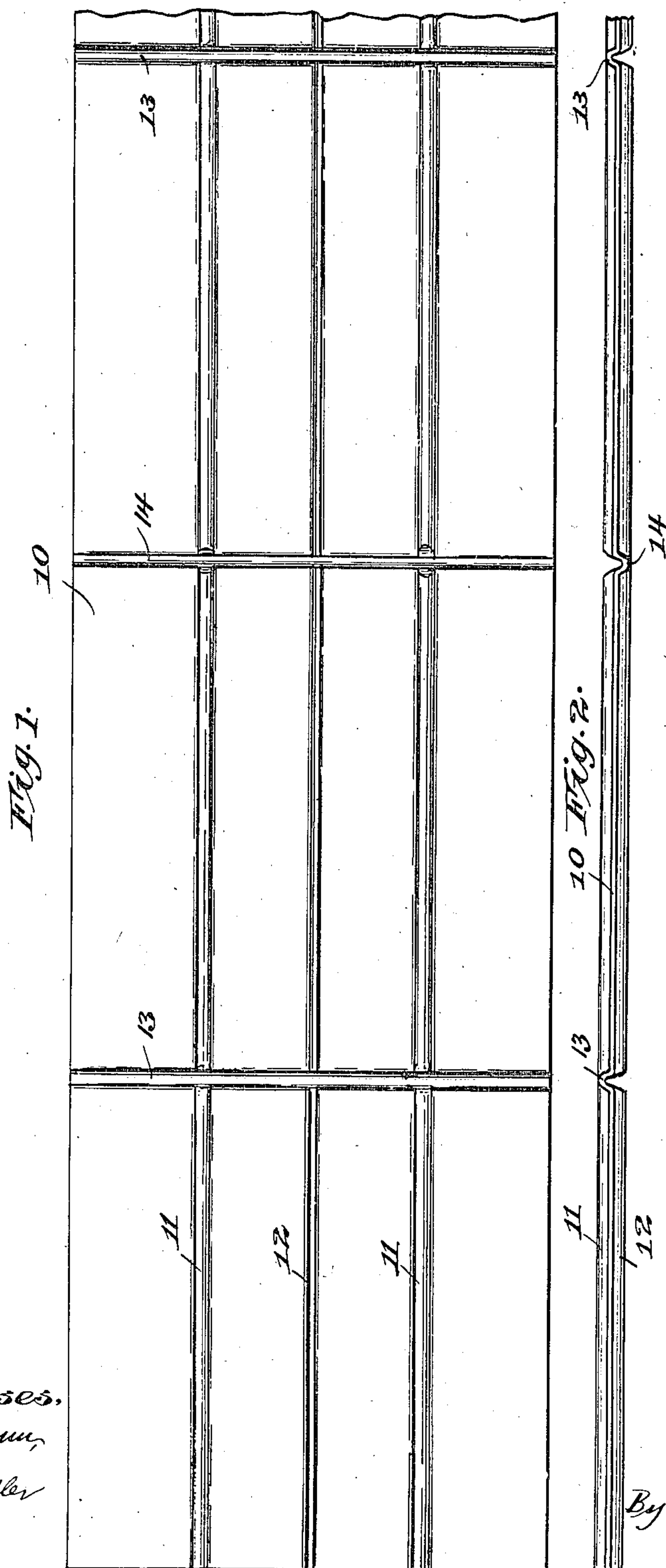
No. 831,839.

PATENTED SEPT. 25, 1906.

E. I. DODDS.
METHOD OF MAKING CAR STAKES.

APPLICATION FILED AUG. 23, 1905.

4 SHEETS—SHEET 1.



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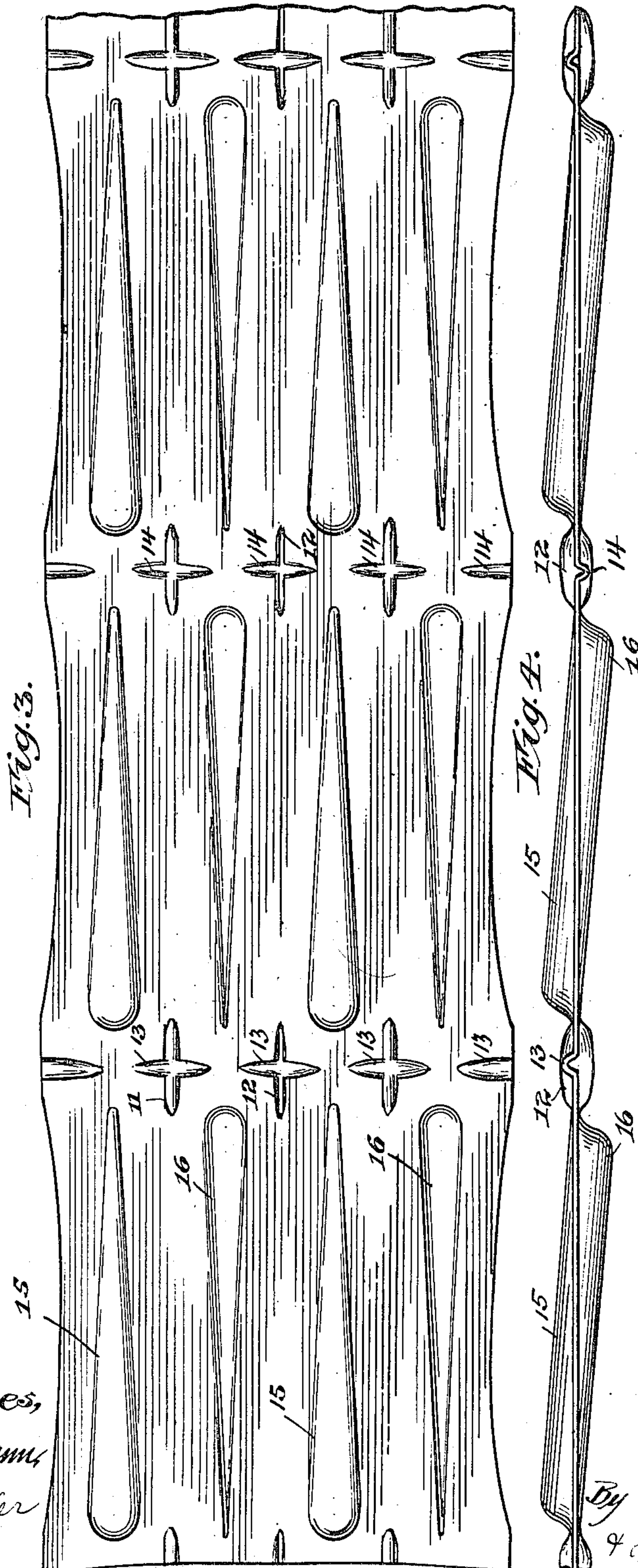
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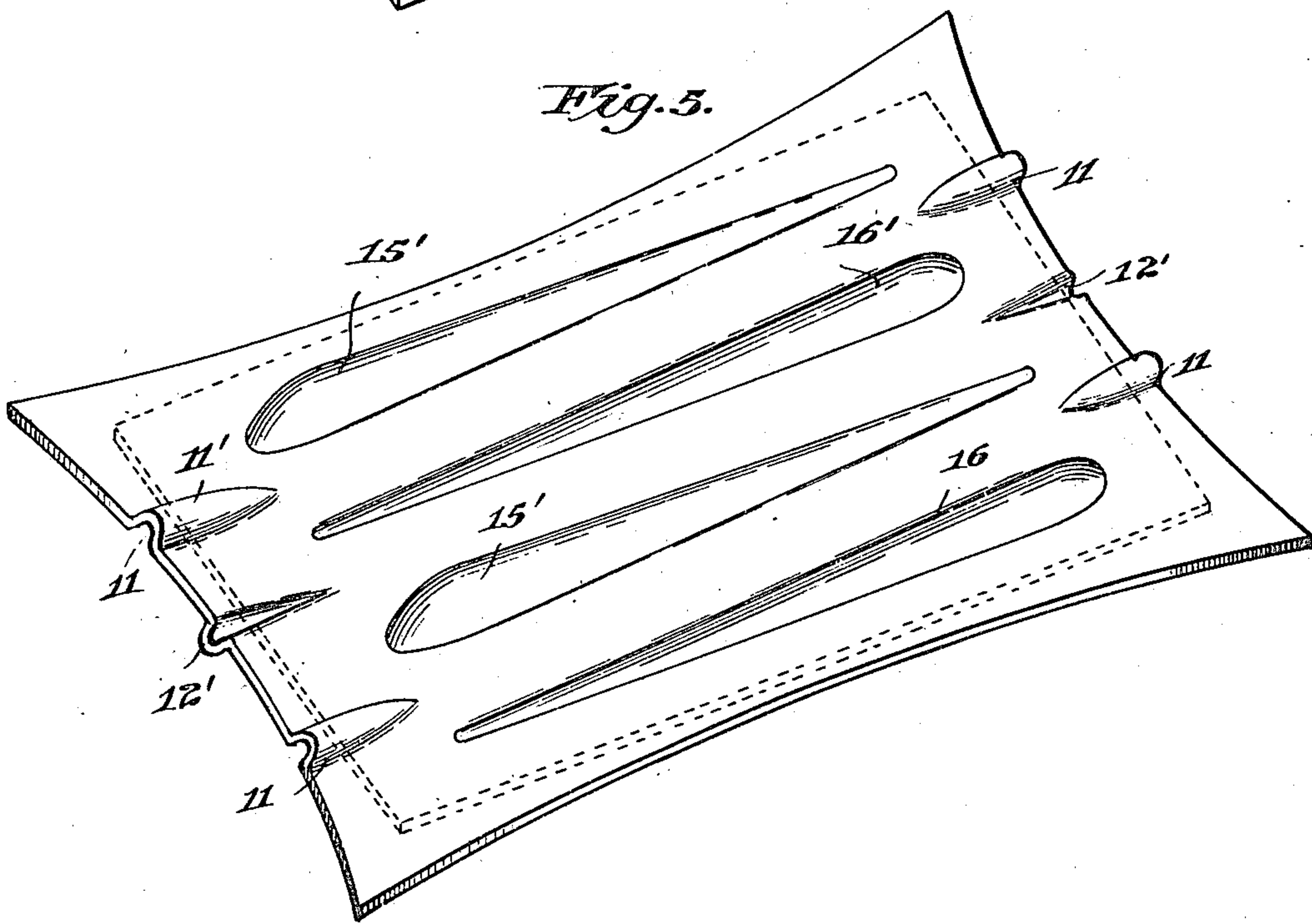
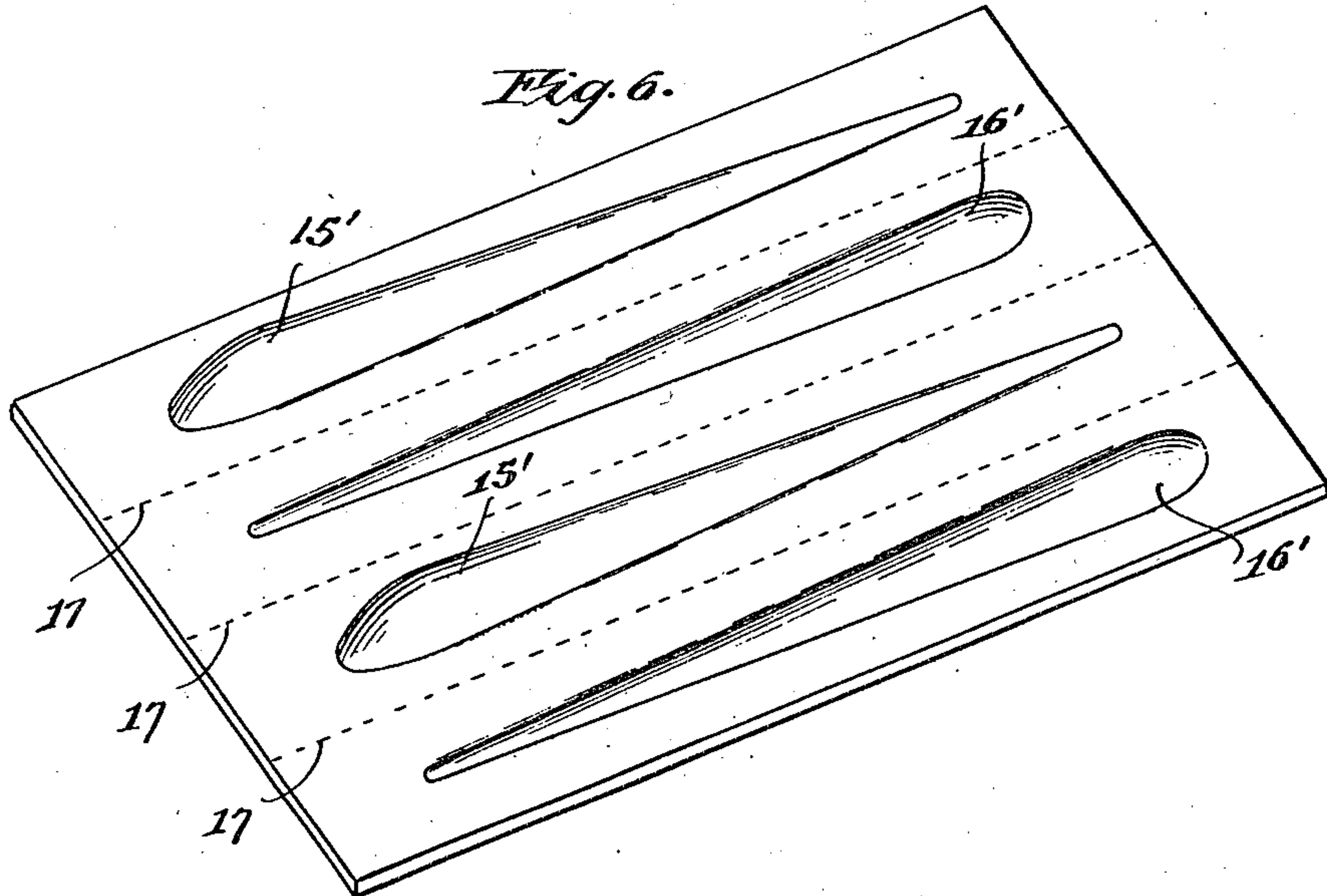
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4 SHEETS—SHEET 3.



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4 SHEETS—SHEET 4.

Fig. 7.

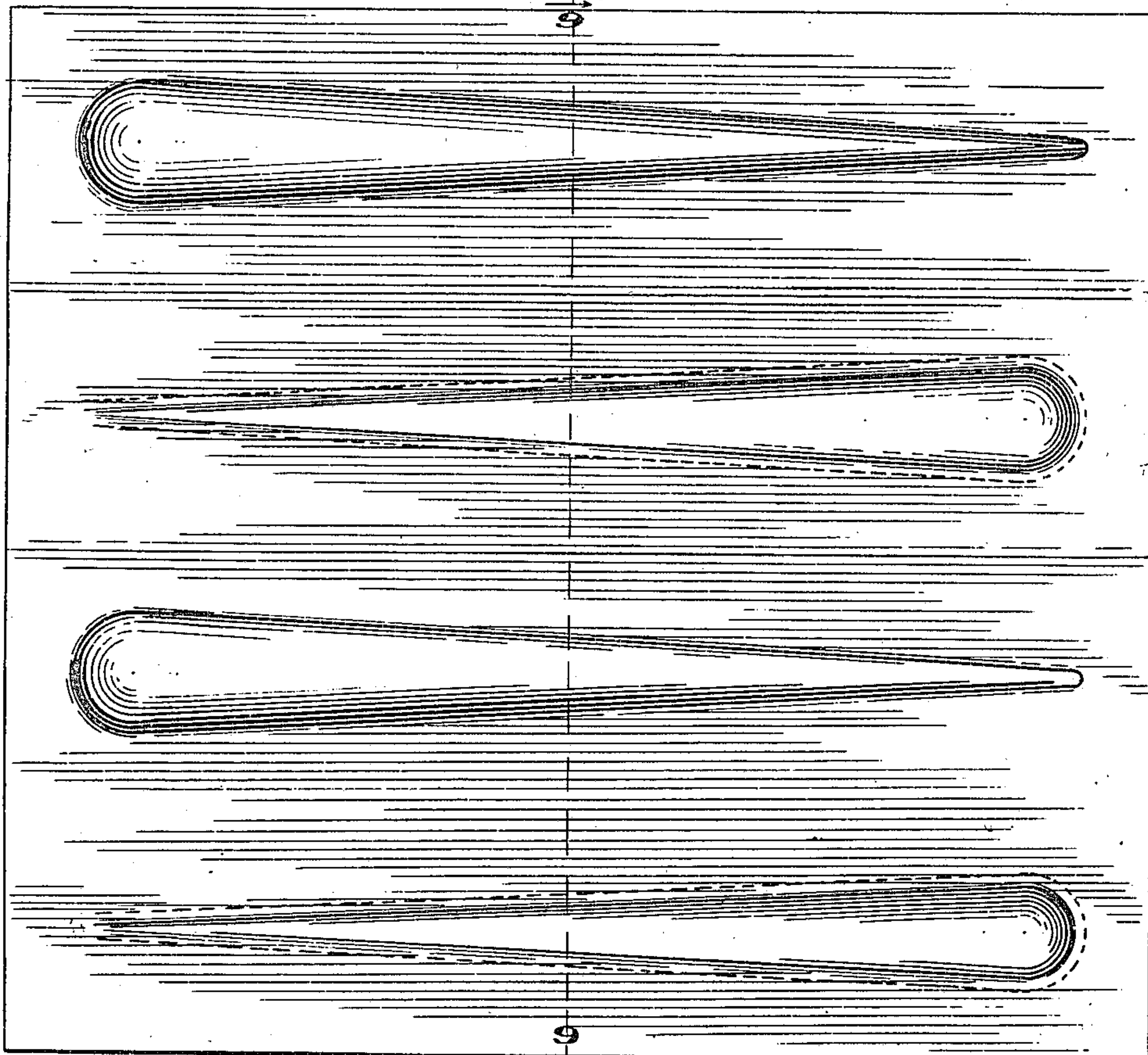


Fig. 8.

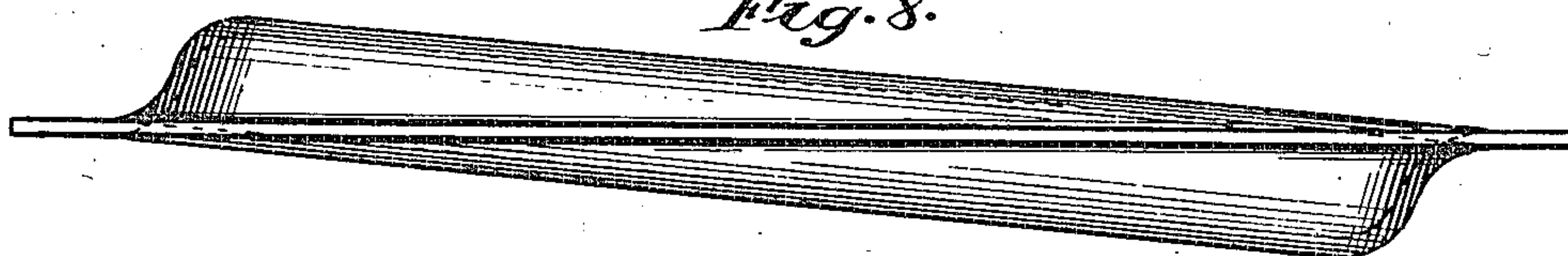
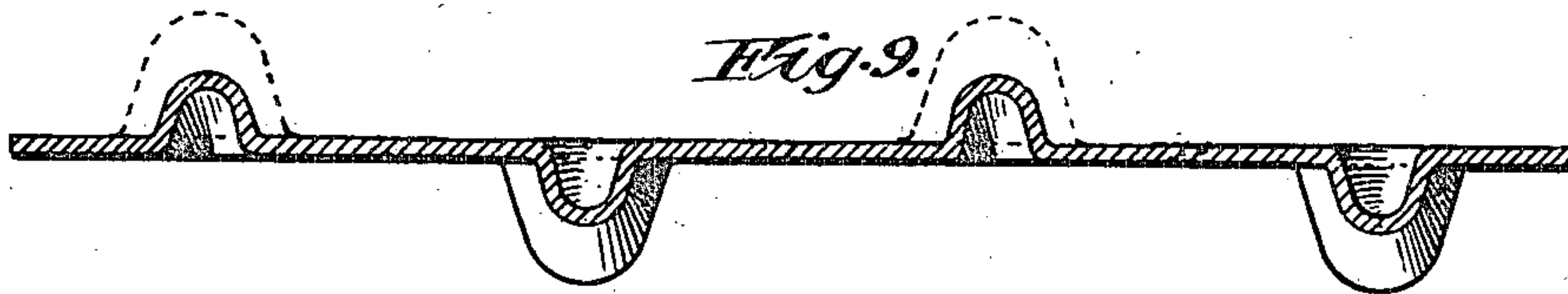


Fig. 9.



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UNITED STATES PATENT OFFICE.

ETHAN I. DODDS, OF PULLMAN, ILLINOIS, ASSIGNOR TO THE PULLMAN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

METHOD OF MAKING CAR-STAKES.

No. 831,839.

Specification of Letters Patent.

Patented Sept. 25, 1906.

Application filed August 23, 1905. Serial No. 275,377.

To all whom it may concern:

Be it known that I, ETHAN I. DODDS, a citizen of the United States, residing at Pullman, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Methods of Making Car-Stakes, of which the following is a specification.

In order to economically manufacture sheet-metal car-stakes, I have devised the following method which especially recommends itself to those skilled in the art because of the ease, rapidity, and comparatively low cost with which the stakes may be produced. The stakes in completed form each comprise a sheet-metal base, preferably rectangular in shape and having pressed out of the plane thereof one or more integral hollow tapering ribs with rounded outer backs. It has been customary heretofore to make one stake of this type at a time, trimming the base portion to shape after pressing or stamping out the rib. My invention involves the manufacture of a number of these stakes simultaneously from a single sheet of metal. Where several stakes are to be made at once, as a preliminary preparation of the sheet for the main operation I press therein several comparatively small longitudinal and transverse temporary ribs spaced apart in correspondence to the width and length of the stakes for the purpose of providing at the proper places metal which will be needed to be drawn in by the dies to form the large permanent tapering ribs of the stakes. The latter ribs are then formed in the sheet by means of dies and pressure, the alternating longitudinal rows being pressed out of the plane of the sheet in opposite directions upwardly and downwardly, so as not to unduly draw the metal in the stamping operation, and also having the narrow ends of the ribs extending in opposite directions. The remaining portions of the temporary ribs which have not been drawn flat by the stamping of the tapering stake-ribs are then pressed into the plane of the sheet and the latter is trimmed and cut so that each stake has one tapering rib.

If desired, all of the tapering ribs may be stamped in the sheet parallel to each other, the intervening temporary ribs having first been supplied to the sheet and the tapering ribs being disposed with their narrow ends extending alternately in opposite directions.

On the accompanying drawings I have illustrated the method of making car-stakes according to my invention, like reference characters thereon referring to the same parts throughout.

Figure 1 is a face view of a metal sheet after having been supplied with temporary longitudinal and transverse ribs. Fig. 2 is an edge view of the metal sheet shown in Fig. 1. Fig. 3 is a face view of the sheet shown in Fig. 1 after the same has been operated upon to press the tapering stake-ribs out of the plane thereof. Fig. 4 is an edge view of the sheet shown in Fig. 3. Fig. 5 is a perspective view of a sheet with four parallel tapering embossed ribs, showing also the remaining portions of the temporary ribs. Fig. 6 is a perspective view of the sheet shown in Fig. 5 after the remnants of the temporary ribs have been pressed flat and the sheet trimmed to the proper size. Fig. 7 is a face view of a sheet upon which there have been embossed four tapering ribs, the sheet having also been trimmed. Fig. 8 is an edge view of the sheet shown in Fig. 7. Fig. 9 is a cross-section on the line 9 9 of Fig. 7.

Referring to Fig. 1, temporary parallel longitudinal ribs 11 and 12 are embossed on or pressed out of the plane of a rectangular sheet of metal 10, the ribs being spaced apart a distance substantially equal to the width of the base-plate of the finished stake. These ribs are pressed alternately upward and downward, as shown, ribs 11 projecting upwardly, the rib 12 extending downwardly. Transverse temporary ribs 13 and 14 are also embossed on the sheet, the ribs extending alternately in opposite directions, the ribs 13 protruding upwardly, as shown, and ribs 14 downwardly. Although in the drawings I have shown but three of these transverse ribs, it is evident that a sheet of practically any length may be employed with a number of transverse ribs corresponding to the length of the sheet dividing the same into parts of substantially the length of the finished stake. On each of the flat portions of the sheet there is then stamped or embossed a tapering rib out of the plane thereof, as shown in Fig. 3, the alternative ribs 15 being pressed upwardly and the alternative ribs 16 being stamped downwardly, the tapering ends of ribs 15 pointing in one direction, while the tapering ends of ribs 16 point in op-

posite direction. By this stamping operation the metal disposed in the temporary ribs 11 and 12 is drawn laterally to form portions of the tapering ribs. The latter also
 5 draw metal from the transverse ribs 13 and 14, thus leaving the short portions of the temporary ribs, as shown in Fig. 3. In order to prepare this sheet for the operation of cutting the stakes apart, the remaining portions of the temporary ribs are pressed into
 10 the plane of the sheet, which is afterward cut longitudinally and transversely on substantially the lines where the temporary ribs existed, so that each stake will have a single
 15 tapering rib.

Where but four parallel ribs are pressed from the sheet at the same time, the sheet assumes the shape shown in Fig. 5. The short portions of the temporary ribs 11' and
 20 12' are then pressed flat, the sheet being subsequently trimmed on the dotted lines shown in Fig. 5, thus producing a sheet of the shape and size illustrated in Fig. 6. To separate the stakes, I shear the sheet shown in
 25 the latter figure on the lines 17, thus forming four stakes, each with a rectangular base and an embossed tapering rib, as shown.

Figs. 7, 8, and 9 show more clearly the construction of the tapering ribs and the manner
 30 in which they are stamped alternately in opposite directions out of the plane of the sheet.

It is apparent that the number of ribs stamped in the sheet is quite immaterial, and
 35 although I have illustrated several sets of four parallel ribs each the number of sets and the number in each set, as well as the size of the sheet, can be varied to any extent desired. The advantage of using the temporary ribs has been made clear as described
 40 above; but the stakes can be manufactured without the use of such temporary ribs, although the metal would perhaps be unduly drawn in such an operation. Instead of
 45 pressing the temporary ribs in opposite directions they may be all stamped so as to project from only one face of the sheet, such a method operating nearly as well as where the ribs project from each side of the sheet. It
 50 is also evident that the completed stake may have more than one rib projecting outwardly from its face, if desired, the process of manufacture being correspondingly modified.

I claim—

55 1. The method of manufacturing car-stakes, which consists in stamping ribs alternately in opposite directions out of the plane of a metal sheet, and cutting the sheet so that each stake will have one of said ribs, substantially as described.
 60

2. The method of manufacturing car-stakes, which consists in pressing temporary ribs out of the plane of a metal sheet, stamping stake-ribs out of the plane of said sheet,
 65 and cutting the sheet so that each stake will

have one of said latter ribs, substantially as described.

3. The method of manufacturing car-stakes, which consists in pressing temporary ribs out of the plane of a metal sheet, stamping stake-ribs alternately in opposite directions out of the plane of said sheet, and cutting the sheet so that each stake will have one of said latter ribs, substantially as described.
 75

4. The method of manufacturing car-stakes, which consists in pressing temporary ribs alternately in opposite directions out of the plane of a metal sheet, stamping stake-ribs alternately in opposite directions out of the plane of said sheet, and cutting the sheet so that each stake will have one of said latter ribs, substantially as described.
 80

5. The method of manufacturing car-stakes, which consists in pressing out of the plane of a metal sheet temporary longitudinal and transverse ribs, stamping stake-ribs out of the plane of said sheet, and cutting the sheet so that each stake will have one of said latter ribs, substantially as described.
 85 90

6. The method of manufacturing car-stakes, which consists in pressing in opposite directions out of the plane of a metal sheet temporary longitudinal and transverse ribs, stamping stake-ribs out of the plane of said sheet, and cutting the sheet so that each stake will have one of said latter ribs, substantially as described.
 95

7. The method of manufacturing car-stakes, which consists in pressing alternately in opposite directions out of the plane of a metal sheet temporary longitudinal and transverse ribs, stamping stake-ribs alternately in opposite directions out of the plane of the said sheet, and cutting the sheet so that each stake will have one of said latter ribs, substantially as described.
 100 105

8. The method of manufacturing car-stakes, which consists in stamping tapering ribs alternately in opposite directions out of the plane of a metal sheet, and cutting the sheet so that each stake will have one of said ribs, substantially as described.
 110

9. The method of manufacturing car-stakes, which consists in stamping parallel tapering ribs out of the plane of a metal sheet, said ribs having their broad and narrow ends alternating, and cutting the sheet so that each stake will have one of said ribs, substantially as described.
 115 120

10. The method of manufacturing car-stakes, which consists in stamping parallel tapering ribs alternately in opposite directions out of the plane of a metal sheet, the said ribs being disposed with their broad and narrow ends alternating, and cutting said sheet so that each stake will have one of said ribs, substantially as described.
 125

11. The method of manufacturing car-stakes, which consists in pressing temporary
 130

5 ribs alternately in opposite directions out of the plane of a metal sheet, stamping tapering stake-ribs alternately in opposite directions out of the plane of said sheet, and cutting the sheet so that each stake will have one of said stake-ribs, substantially as described.

10 12. The method of manufacturing car-stakes, which consists in pressing temporary ribs alternately in opposite directions out of the plane of a metal sheet, stamping tapering stake-ribs alternately in opposite directions out of the plane of said sheet, said tapering ribs being disposed with their narrow ends extending alternately in opposite directions, and cutting the sheet so that each stake will have one of said ribs, substantially as described.

20 13. The method of manufacturing car-stakes, which consists in pressing longitudinal and transverse temporary ribs out of the plane of a metal sheet, stamping tapering stake-ribs out of the plane of the flat portions of said sheet, alternate longitudinal rows of said tapering ribs having their narrow ends

25 extending in opposite directions, and cutting the sheet so that each stake will have one of said ribs, substantially as described.

14. The method of manufacturing car-stakes, which consists in pressing longitudinal and transverse temporary ribs alternately in opposite directions out of the plane of a metal sheet, stamping tapering stake-ribs out of the flat portions of the sheet, the alternate longitudinal rows of said stake-ribs being stamped in opposite directions out of the plane of the flat portions and being disposed with their narrow ends extending in opposite directions, and cutting said sheet so that each stake will have one of said ribs, substantially as described.

40 Signed by me at Chicago, Illinois, this 18th day of August, 1905, in the presence of two witnesses.

ETHAN I. DODDS.

Witnesses:

FREDERICK C. GOODWIN,
WALTER M. FULLER.